

ONTARIO MINISTRY OF ENVIRONMENT



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OPERATING SUMMARY

CITY OF

BURLINGTON~ SKYWAY

WATER POLLUTION CONTROL PLANT

TD
367
.A56
B876
1974
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LABORATORY & RESEARCH DIVISION
MINISTRY OF THE ENVIRONMENT

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TD
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B876
1974

Burlington ~ Skyway : water
pollution control plant.

81271



Ontario

MINISTRY OF THE ENVIRONMENT

MINISTER
Honourable William G. Newman

DEPUTY MINISTER
E. Biggs

ASSISTANT DEPUTY MINISTER
REGIONAL OPERATIONS
J. Barr

REGIONAL OPERATIONS DIVISION

DIRECTOR, CENTRAL REGION
P. Cockburn

MANAGER, UTILITY OPERATIONS
A. Thomas

BURLINGTON-SKYWAY
WATER POLLUTION CONTROL PLANT

operated for

THE CITY OF BURLINGTON

by the

MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by
Plant Performance Unit
TECHNICAL SERVICES BRANCH
T. Cross, Director



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TD
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W38
1974
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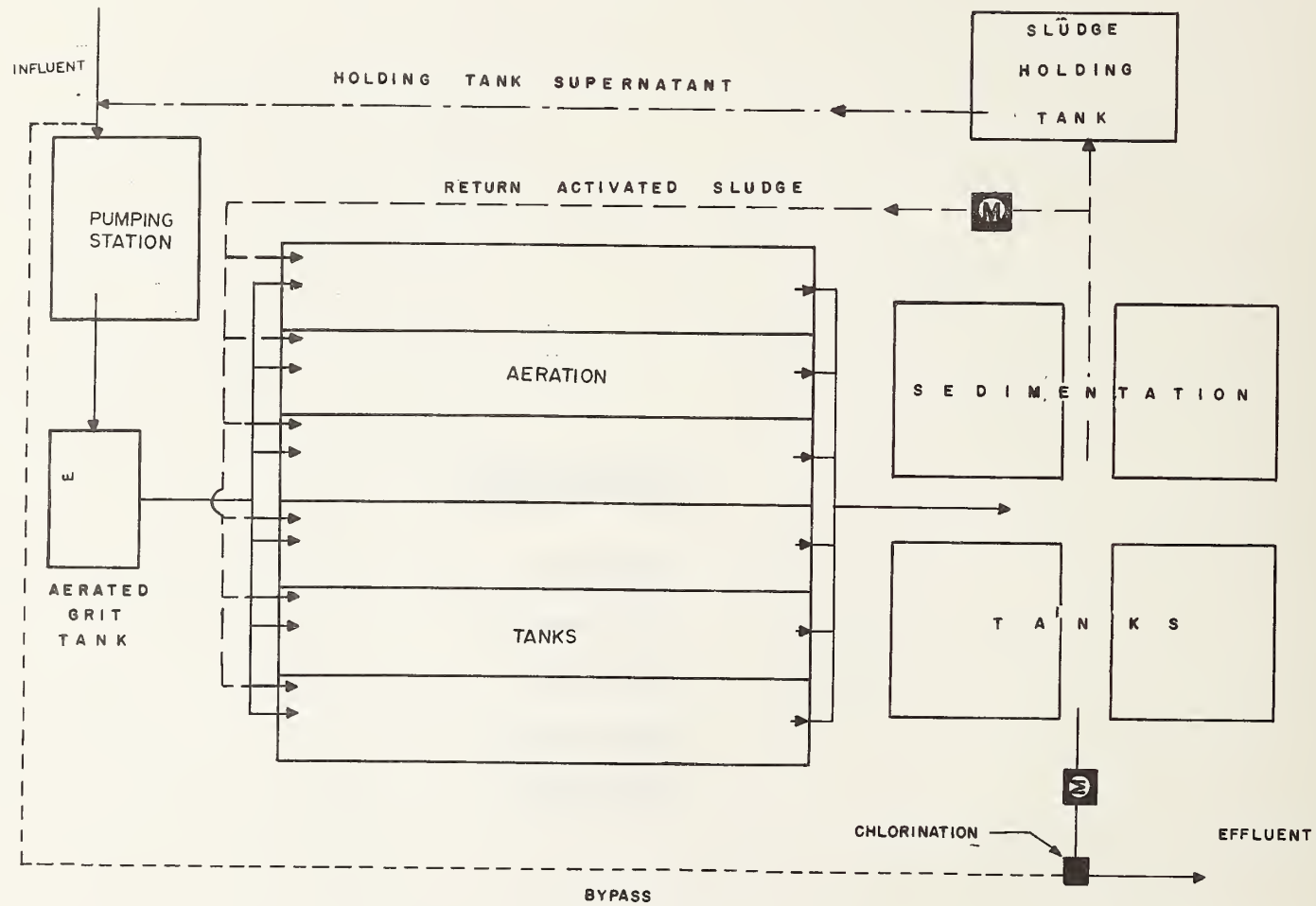
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CONTENTS

Title Page	1
Flow Diagram	4
Design Data	5
Project Costs	6
Process Data	8

CITY OF BURLINGTON
SKYWAY WPCP



DESIGN DATA

PROJECT City of Burlington
Skyway WPCP

PROJECT NO. 2-0105-62

DESIGN FLOW 6 mgd

BOD - Raw Sewage 200 mg/l

SS - Raw Sewage 200 mg/l

PRETREATMENT

Coarse Screening

Type: Link Belt, mechanically-cleaned
Size: $2\frac{1}{2}$ " space

Lift Station Pumps (@ 30' tdh)

2 @ 6 mgd each; 2 @ 5 mgd each

Screening

Type: Link Belt, mechanically-cleaned
Size: 1" space

Grit Removal

Type: Air degritter
Size: One 20.3' x 25' x 14.2'
Retention: 20.8 min

SECONDARY TREATMENT

Aeration Tanks

Type: Diffused air, single pass
Size: Six 270' x 27' x 15'
(660,300 ft. or 4.12 mil gal)
Retention: 16.5 hr
Loading: 9.5 lb BOD/1000 ft³

Air Supply

Type: Hoffman multi-stage centrifugal blowers

Size: 3-4000 cfm (max), 1-6000 (max)

Diffusers

Type: Saran-covered flexofusers
Spacing: 250 tubes per tank

Secondary Sedimentation

Type: Eimco
Size: Four 60' x 60' x 12' swd
(538,000 gal)
Retention: 4.1 hours
Loading: Surface, 434 gal/ft²/day
Weir, 7,100 gal/ft/day

CHLORINATION

Type: Fischer & Porter
Size: Two 2000 lb/day

Chlorine Contact Chamber

- nil
- chlorination in outfall

OUTFALL

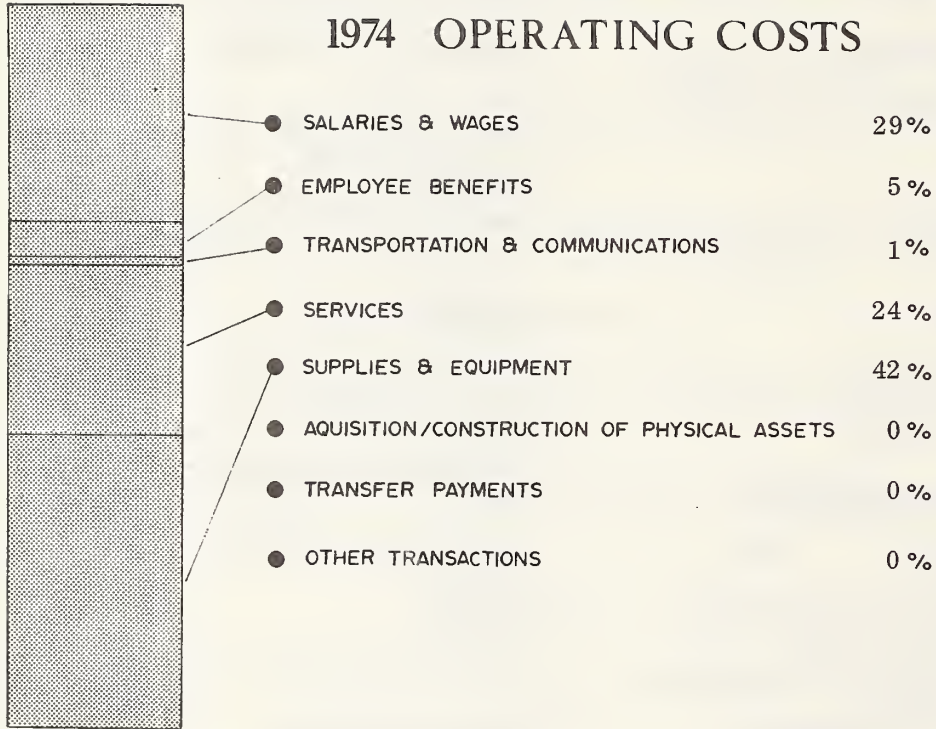
- to Hamilton Harbour

SLUDGE HANDLING

Type: Thickening tank, decanted
Size: One 20' dia x 9' depth
(2830 ft³ or 1760 gal)

ANNUAL COSTS

1974 OPERATING COSTS



YEARLY OPERATING COSTS

YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS	
			\$/M.G.	¢/lb BOD
1969	1218	80,952	66	5
1970	1500	103,062	69	5
1971	2058	106,922	52	2
1972	2948	127,078	43	2
1973	3433	158,874	46	4
1974	3550*	205,621	58	5

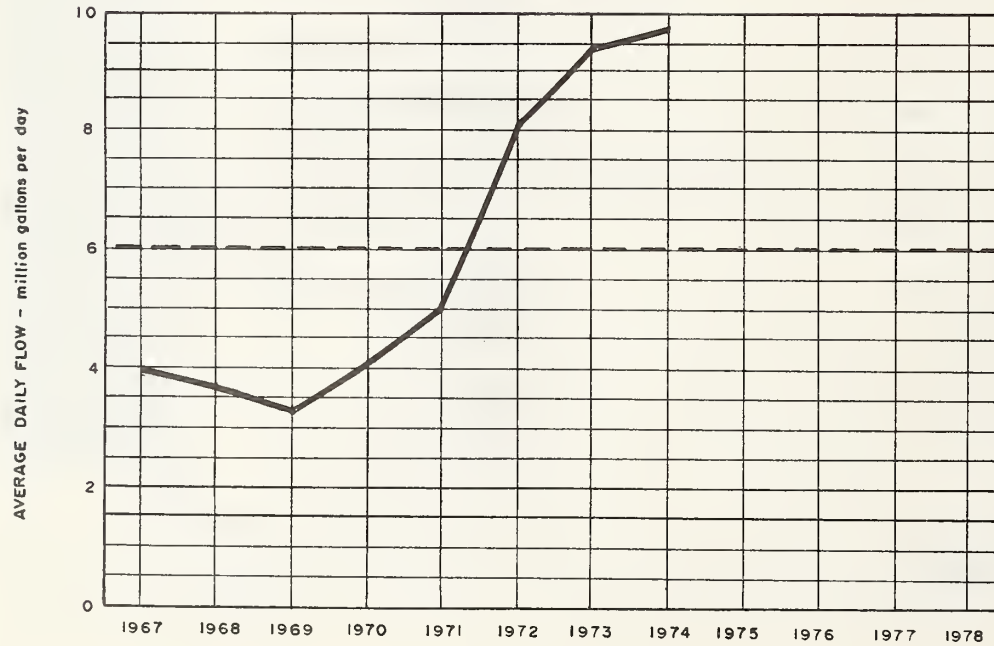
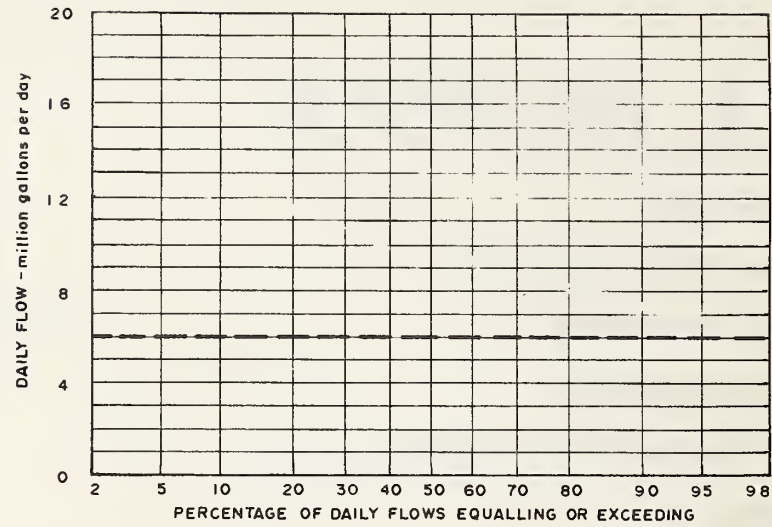
*Estimated

OPERATING EXPENDITURES

Regular Staff	\$ 55783	\$
Casual (Unclassified) Staff	2950	
TOTAL SALARIES AND WAGES		58733
TOTAL EMPLOYEE BENEFITS		11171
TOTAL TRANSPORTATION AND COMMUNICATIONS		1421
Insurance	5737	
Sludge Haulage	38788	
Repairs and Maintenance	3901	
Other Services	393	
TOTAL SERVICES		48819
Machinery and Equipment	2043	
Chemicals	5151	
Utilities	70696	
Other Supplies and Equipment	7587	
TOTAL SUPPLIES AND EQUIPMENT		85477
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		
TOTAL TRANSFER PAYMENTS		
OTHER TRANSACTIONS		
GRAND TOTAL	GRAND TOTAL	\$ 205621

PROCESS DATA

FLows



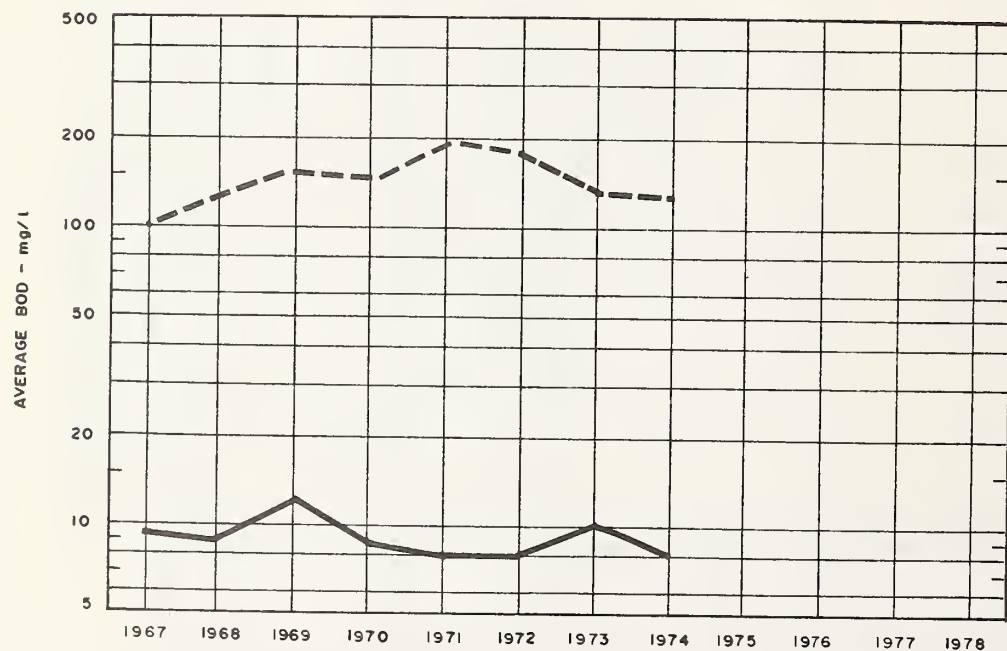
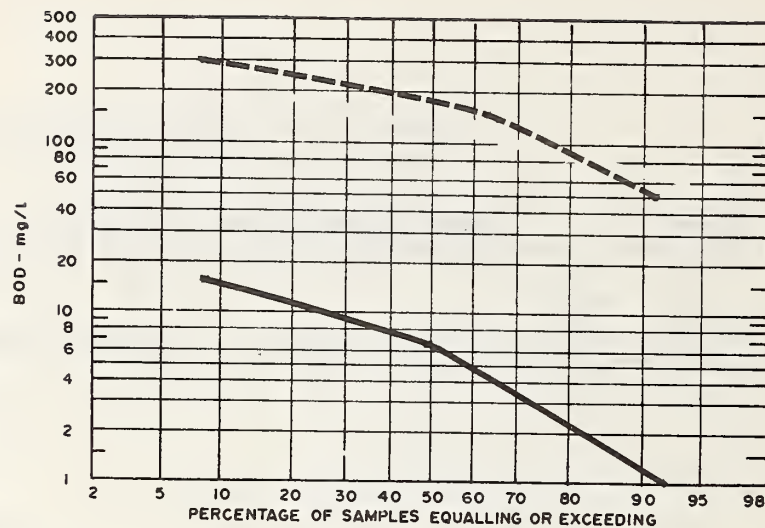
DESIGN CAPACITY - - - - -

PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10 ⁵ pounds	mg/l	mg/l	%	10 ⁵ pounds	mg/l P	mg/l P
JAN	315	10.1	11.0	180	8	96	5.4	213	13	94	6.3	7.0	2.2
FEB	283	10.1	10.3	130	6	95	3.5	190	20	84	4.8	4.4	2.0
MAR	303	9.8	10.1	120	10	92	3.3	119	24	80	2.9	4.5	1.1
APR	270	9.0	9.0					80	20	75	1.6		
MAY	294	9.5	13.0	110	13	88	2.9	163	30	82	3.9	4.0	2.8
JUNE	399	13.0	13.0	34	12	65	.9	183	23	87	6.4	4.1	
JULY	324	10.5	13.0	120	6	95	3.7	210	15	93	6.3	7.2	2.1
AUG	283	9.1	14.5	42	2	95	1.1	153	18	88	3.8	3.5	2.8
SEPT	264	8.8	10.2	120	5	96	3.0	344	23	93	8.5	6.2	2.6
OCT	264	8.5		80	1	99	2.1	214	21	90	5.1	8.5	7.5
NOV	275	9.2		240	7	97	6.4	410	13	97	10.9	13.0	.8
DEC	276	8.9	10.3	180	19	89	4.4	228	20	91	5.7	9.4	5.2
TOTAL	3550*	-	-	-	-	-		-	-	-		-	-
AVG.	296	9.7	MAXIMUM 14.5	124	8	94	3.4	221	20	91	5.9	6.5	2.9
No. of Samples	-	-	-	12	11	-	-	49	42	-	-	11	10

*All flows are estimates.

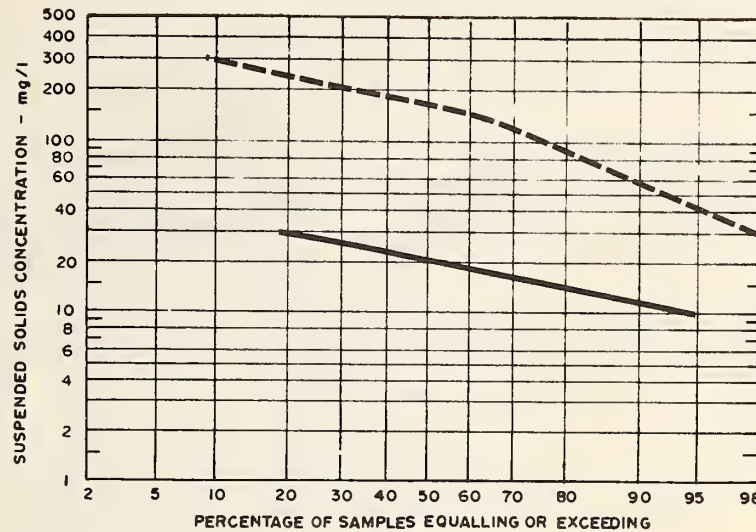
BIOCHEMICAL OXYGEN DEMAND



PLANT INFLUENT - - - - -

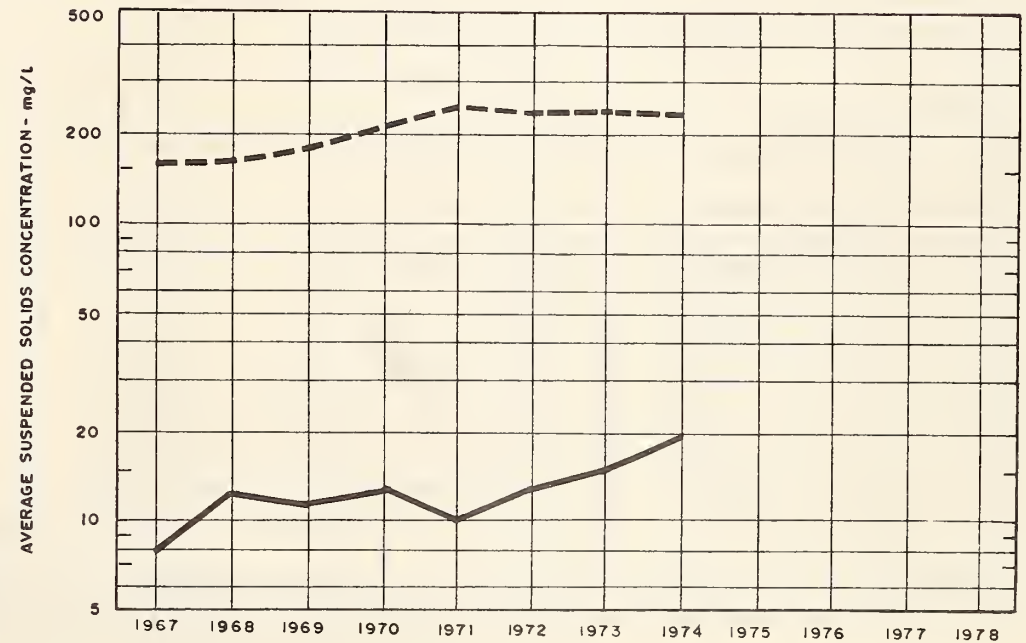
PLANT EFFLUENT —————

SUSPENDED SOLIDS

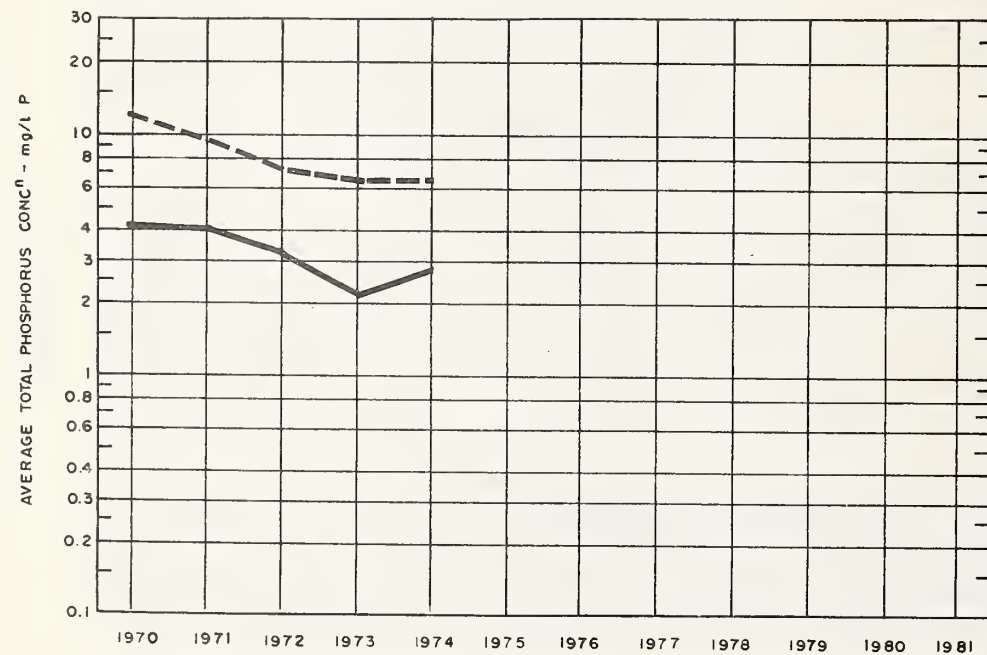
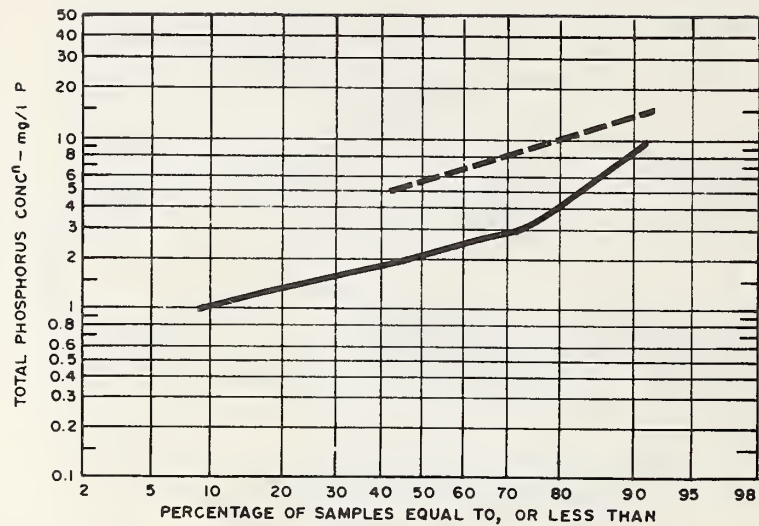


PLANT INFLUENT

PLANT EFFLUENT



PHOSPHORUS



PLANT INFLUENT

PLANT EFFLUENT

TREATMENT DATA

MONTH	GRIT	CHLORINATION		AERATION			WASTE SLUDGE			HOLDING TANK			
	QUANTITY REMOVED cubic feet	CL ₂ USED 10 ³ pounds	AVG. DOSAGE mg/l	MLSS. CONC mg/l	F/M day ⁻¹	AIR USED 1000 ft ³ lb BOD	QUANTITY 10 gallons	SUSPENDED SOLIDS mg/l	VOL. SOLIDS %	QUANTITY REMOVED 10 ⁶ gallons	SUSPENDED SOLIDS mg/l	VOL. SOLIDS %	AMOUNT HAULED 10 ³ cubic yards
JAN	630			4900	.09	1.0		9600	68	.26		67	1.4
FEB	390			4300	.07	1.4		8000	62	.39	11000	58	2.3
MAR	475			3100	.09	1.6		5500	61	.17	8400	60	1.0
APR	770			3500				10000	66	.25	13000	66	1.5
MAY	690	6.0	3.6	3700	.08	2.2		9300	65	.25	30000	70	1.5
JUNE	430	11.5	2.9	4300	.03	7.7		11000	65	.25			1.5
JULY	660	10.3	3.2	5300	.09	1.9		9200	66	.41	12000	61	2.4
AUG	520	7.2	2.5	4800	.03	6.3		10000	65	.54	16000	48	3.2
SEPT	480	8.1	3.1	5100	.10	2.1		10000	63	.82	23000	53	4.9
OCT.	420	3.8	3.0	6000	.04	3.4		11000	63	.41	18000	58	2.4
NOV	610			5300	.15	1.1		11000	58	.24	19000	54	1.4
DEC	820			5800	.10	1.6		11000	67	.52	16000	61	3.1
TOTAL	6895	46.9	-	-	-	-		-	-	4.50	-	-	26.5
AVG.	1.9 cu. ft/mil gal	9.4	3.0	4700	.08	2.8		9600	64	.38	17000	60	2.2

Date Due

Ontario Water Resources Commission.
Division of Plant Operations
TD 227/B87/S69/W38/1974/MOE
Burlington - Skyway Water Pollution Control Plant.
Annual Reports.
1974

DATE	ISSUED TO
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